I claim:

1. ~~In an electrical~~ system with a plurality of system components carrying out the same or mutually corresponding actions, an apparatus for monitoring a proper operation of the plurality of components of the electrical system, comprising:

a plurality of dedicated monitoring devices each assigned to a respective one of the system components to be monitored, each of said dedicated monitoring devices being operable independently of the respective system component to be monitored.

2. The apparatus according to claim 1, wherein said monitoring devices are connected to receive monitoring data from the respectively associated system component and are configured to compare monitoring data received from the respectively associated system component and from other system components or from other monitoring devices, for determining whether or not the respectively associated system component is operating properly.

3. The apparatus according to claim 2, wherein said monitoring devices are configured to examine the monitoring data received from the system components and to decide whether the monitoring data meet predefined conditions.

4. The apparatus according to claim 3, wherein said monitoring devices are configured to check whether the monitoring data received from the system components to be monitored and/or from the monitoring devices associated therewith agree or correspond to one another.

5. The apparatus according to claim 3, wherein said monitoring devices are configured to check whether the monitoring data received from the system components to be monitored and/or from the monitoring devices associated therewith are in a predetermined ratio or a predetermined relationship with one another.

6. The apparatus according to claim 3, wherein said monitoring devices are configured to check whether the monitoring data received from the system components to be monitored and/or from the monitoring devices associated therewith are predetermined data.

7. The apparatus according to claim 3, wherein, if a given said monitoring device concludes that the monitoring data from one of the system components do not meet the predefined condition, the relevant system component is made to stop operating.

8. The apparatus according to claim 7, wherein said monitoring device is configured to stop an operation of the relevant system component.

9. The apparatus according to claim 8, wherein the system components to be monitored are constructed and operated to only process a given task when an enable signal is present.

10. The apparatus according to claim 9, wherein said monitoring device is configured to generated the enable signal for the respectively associated system component.

11. The apparatus according to claim 9, wherein the enable signal is formed by a logical combination of control signals generated and output by the monitoring devices associated with a respective system component depending on whether or not the monitoring data output by the system component meet the predefined conditions.

12. The apparatus according to claim 1, wherein the system components to be monitored are program-controlled units.

13. The apparatus according to claim 1, wherein the system components to be monitored are a constituent part of various bus units of a bus system.

14. The apparatus according to claim 13, wherein said monitoring devices are a constituent part of communications controllers of the bus units, and the communications controllers are configured to transmit data to other bus units via the bus, and to receive data via the bus.

15. The apparatus according to claim 13 or 14, wherein the bus units containing the system components to be monitored are connected to one another via a plurality of buses.

16. The apparatus according to claim 15, wherein the bus units contain a number of communications controllers corresponding to a number of buses connecting the communications controllers to one another, wherein each communications controller is connected to a different bus.

17. The apparatus according to claim 16, wherein a monitoring device is provided in each of the communications controllers.

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